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IMPLANTABLE CARDIAC DEFIBRILLATOR WITH CONTROL CIRCUIT FOR CONTROLLING A HIGH VOLTAGE CIRCUIT USING A LOW VOLTAGE CIRCUIT

RELATED APPLICATIONS

[0001] This application is a divisional application of U.S. patent application, Serial Number 09/976,700 titled "APPARATUS FOR CONTROLLING A HIGH VOLTAGE CIRCUIT USING A LOW VOLTAGE CIRCUIT" and filed on 10/11/2001, *now Patent No. 6,657,274* with Comeau, Alain R., listed as inventor, the entirety of the application which is hereby specifically incorporated by reference.

TECHNICAL FIELD

[0002] This invention relates to an implantable cardiac defibrillator circuit, and more specifically, to a power supply contained therein comprising a capacitively coupled bridge circuit for using a low-voltage circuit section to control a high-voltage circuit section while maintaining isolation between the high- and low-voltage sections.

BACKGROUND OF THE INVENTION

[0003] In many electronic systems a low voltage source is often needed to control a corresponding high voltage source. One such need, for example, is commonly found in a device known as an Implantable Cardiac Defibrillator (ICD), in which a high voltage pulse is controlled by a low voltage integrated circuit (IC). In many instances, delivery of the higher voltage is accomplished by way of a non-complementary high voltage switching matrix encompassing a bridge configuration. This switching element frequently employs N-channel Metal-Oxide Semiconductor Field Effect Transistors (MOSFETs), or Insulated Gate Bipolar Transistors (IGBTs), or Silicon Controlled Rectifiers (SCR) depending on the design specifications.

[0004] In order to enhance the overall performance of a system that involves low-to-high voltage transfer, isolation between both the voltage-generating and voltage-delivering functions